



# STATE MINING AND GEOLOGY BOARD

## EXECUTIVE OFFICER'S REPORT



ARNOLD  
SCHWARZENEGGER  
GOVERNOR

For Meeting Date: March 11, 2010

**Agenda Item No. 6: Approval of an Interim Financial Assurance Amount for the Richmond (Chevron) Quarry (CA Mine ID #91-07-0006), Dutra Materials (Operator), Mr. Brian Peer (Agent), City of Richmond.**

**INTRODUCTION:** The State Mining and Geology Board (SMGB) is the lead agency for the City of Richmond, pursuant to the Surface Mining and Reclamation Act of 1975 (SMARA, Public Resources Code (PRC) Section 2710, et seq.). SMARA requires that each surface mining operation maintain a financial assurance in an amount adequate to reclaim, in accordance with the requirements of an approved reclamation plan, the land disturbed by the mining operation at the conclusion of mining activities. SMARA lead agencies are required to annually review the financial assurance amounts for each surface mining operation, and adjust the amount, as necessary, to account for new land disturbed, inflation, or land reclaimed. In any event, the lead agency must ensure that the approved amount is adequate to reclaim the mine site in accordance with the approved reclamation plan (PRC Sections 2770 and 2773.1, and California Code of Regulations (CCR) Section 3804).

**STATUTORY AND REGULATORY AUTHORITY:** Financial assurance cost estimate adjustment requirements are discussed under SMARA, and fall within the SMGB's regulations and guidelines. Lead agencies are required to ensure that financial assurances for reclamation are sufficient pursuant to Division 2, Chapter 9, Article 5 of PRC Section 2770(d) which states:

*"The lead agency's review of reclamation plans submitted pursuant to subdivision (b) or of financial assurances pursuant to subdivision (c) is limited to whether the plan or the financial assurances substantially meet the applicable requirements of Sections 2772, 2773, and 2773.1, and the lead agency surface mining ordinance adopted pursuant to subdivision (a) of Section 2774, but, in any event, the lead agency shall require that financial assurances for reclamation be sufficient to perform reclamation of lands remaining disturbed. Reclamation plans or financial assurances determined to substantially meet these requirements shall be approved by the lead agency for purposes of this chapter. Reclamation plans or financial assurances determined not to substantially meet these requirements shall be returned to the operator within 60 days. Reclamation plans or financial assurances determined not to substantially meet these requirements shall be returned to the operator within 60 days. The*



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*operator has 60 days to revise the plan or financial assurances to address identified deficiencies, at which time the revised plan or financial assurances shall be returned to the lead agency for review and approval.”*

In addition, PRC Section 2773.1(a) states:

*“...Lead agencies shall require financial assurances of each surface mining operation to ensure reclamation is performed in accordance with the surface mining operation's approved reclamation plan, as follows:*

*(3) The amount of financial assurances required of a surface mining operation for any one year shall be adjusted annually to account for new lands disturbed by surface mining operations, inflation, and reclamation of lands accomplished in accordance with the approved reclamation plan.”*

Furthermore, the SMGB's regulations pursuant to Article 11 of the CCR Section 3804, Calculation of Financial Assurance Amount, states:

*“(a) The Financial Assurance Amount shall be calculated as prescribed in Public Resources Code Section 2773.1 and based on:*

- (1) an analysis of the physical activities and materials necessary to implement the approved reclamation plan;*
- (2) the lead agency's unit costs, or costs for third party contracting, for each of these activities, if applicable;*
- (3) the number of units of each of these activities, if applicable;*
- (4) a contingency amount not to exceed 10% of the reclamation costs.*

*(b) The calculated amount should not include the cost of completing mining of the site.*

*(c) In order for the lead agency or the Department of Conservation to determine what annual adjustments, if any, are appropriate to the Financial Assurance Amount, the operator shall annually submit to the lead agency a revision of the written calculation required under Section 3804(a).”*

In regards to cut slopes, and final highwalls and quarry faces, performance standards provided in the SMGB's regulations, CCR 3704(f) state:

*“Cut slopes, including final highwalls and quarry faces, shall have a minimum slope stability factor of safety that is suitable for the*



*proposed end use and conform with the surrounding topography  
and/or approved end use.”*

**BACKGROUND:** The Richmond (Chevron) Quarry is located in the City of Richmond, and encompasses approximately 126 acres. The site is characterized by a flat quarry floor, a hide wall constructed from fill material, and quarry cut slopes with vertical dimensions of up to approximately 350 feet.

Surface mining operations include a processing and recycling plant, significant volumes of imported stockpiles of landscape and construction debris, and imported asphalt material and soil, which is reprocessed on site and recycled. In response to the need to evaluate the overall stability of an existing cutslope, geotechnical studies were completed by both Dutra Materials (Operator) and the Chevron Energy and Technology Company (land owner). These studies were reviewed by the Department of Conservation’s Office of Mine Reclamation (OMR) and SMGB staff, and comments and recommendations were provided for the Geohazards Committee’s (Committee) consideration at its May 8, 2008, meeting.

**Previous Administrative Enforcement Actions:** Following conduct of the 2005 SMARA mine inspection, several violations and corrective measures were noted. The operator is currently under an Order to Comply to provide: 1) a proposed workplan to mitigate an unstable cutslope; 2) a proposed revegetation plan; 3) a re-evaluation of the financial assurance cost estimate to reflect mitigative and stabilization efforts, and current labor and equipment rates; and 4) an amended reclamation plan. A Notice of Violation was issued on December 12, 2005. An Order to Comply was issued on March 14, 2006. An Administrative Penalty for the amount of \$10,000 was issued on September 14, 2006. An additional Administrative Penalty of \$90,000 was issued on November 9, 2006, for failure to adequately correct violations pursuant to SMARA. A proposed schedule was provided by the operator dated January 4, 2007, and revised in correspondence dated January 31, 2007. At its February 8, 2007, regular business meeting, the SMGB deferred payment of the Administrative Penalty of \$90,000 pending formal receipt of professional reports to be provided in accordance with the timeline and schedule previously provided by representatives of Dutra Materials. Since January 2007, progress reports have been provided on a monthly basis, and revisions to the proposed schedule have been made, as appropriate.

**SMGB February 8, 2007, Regular Business Meeting:** As noted above, at its meeting held on February 8, 2007, the SMGB deferred a previously issued administrative penalty of \$90,000, but did require that the operator adhere to a schedule for completion of required tasks to provide an adequate amended reclamation plan and financial assurance cost estimate.

**SMGB June 14, 2007, Regular Business Meeting:** At its June 14, 2007, meeting, the SMGB heard from Dutra’s and Chevron’s consultants regarding the geotechnical work that has been performed to date, preliminary analysis, and possible mechanisms for slope failure. The SMGB moved to forward further geotechnical discussions of slope failure mechanisms, and

proposed mitigation alternatives, to the Geohazards Committee (Committee), prior to the SMGB considering action on an amended reclamation plan and financial assurance amount.

Previous Geohazards Committee Activities: The Geohazards Committee reviewed geotechnical documents and held meetings to discuss geotechnical issues associated with the subject site on September 7, 2007, and January 9, March 9, May 8 and July 10, 2008. The Committee requested a summary of mitigation alternatives, which was subsequently provided in ENGEO's report titled: "*Discussion of Conceptual Slope Mitigation Options*," dated April 24, 2008. This report provided more information on the conceptual slope mitigation options presented in their October 18, 2007, report, and provided preliminary estimates of construction quantities, costs, and impacts for each alternative, which collectively were meant to represent a range of typical mitigation measures for stabilization of rock slopes. The discussion of each alternative relied on an approach of comparing "conceptual advantages," "conceptual impacts," and estimated costs to make conclusions about the feasibility of a particular measure. Table 5 of their report summarized the results of this exercise with the following options and estimated costs discussed:

Alternative 1 – Imported Fill Buttress	\$1,357,500
Alternative 2 – Ridge Cut\Fill Buttress Balanced on Site	\$3,675,000
Alternative 3 – Cut\Fill Buttress Balanced on Site with Retained Slope	\$8,150,000
Alternative 4 – Structural Slope Stabilization	\$17,200,000
Alternative 5 – Slope Setback, Monitoring, and Maintenance	\$100,000

Alternative 5 was the least costly by an order of magnitude, and ENGEO and Dutra reportedly favored this alternative, presumably because it would have the least impact on the environment and infrastructure of the mine site and surrounding area. In fact, ENGEO's report indicated that Alternative 5 will have no impacts. However, the report did not carefully and adequately consider all advantages and impacts of each mitigation alternative.

The assessment of the preferred alternative as presented by ENGEO was considered a preliminary assessment of possible alternatives for consideration but is inadequate for conduct of a comprehensive analysis of mitigation alternatives. Essentially, the approach proposed was to conduct ongoing monitoring while leaving an unstable slope that would continue to fail and potentially degrade into an eyesore and hazard to the public and the environment. The approach also only focused on the next movement and did not consider the long-term effects on the slope and the safety of nearby petroleum storage tanks. The assessed feasibility of each alternative did not recognize the importance of the requirements of SMARA, which states that final mined slopes should be stable and properly revegetated. Stable slopes and successful revegetation are noted as conceptual advantages for Alternatives 1 through 4, but these advantages were downplayed in the study by narrowly

interpreting that the end use would be industrial for the entire site. The industrial end use and appropriate SMGB-defined factor of safety were used to inflate the stated impacts and estimated costs for Alternatives 1 through 4 rather than providing other, possibly more practical solutions, to the problem.

At the Geohazards Committee's July 10, 2008, meeting, the operator indicated that their consultant had not completed their re-evaluation of the cut slope. It was recommended by the Executive Officer that this matter be deferred and rescheduled for the Committee's upcoming September 2008 meeting. After an additional time extension was granted in order to complete further slope stability analysis and to conduct peer reviews, a revised report prepared by ENGEO titled "*Analysis of Slope Mitigation Alternatives*", dated November 24, 2008, was received by the SMGB on November 26, 2008. This report has been reviewed by OMR and SMGB staff.

On November 26, 2008, the SMGB also received a "*Cost Estimate for an Interim Financial Assurance Mechanism for Slope Mitigation*", dated November 25, 2008. This interim financial assurance cost estimate proposed an amount of \$550,000 for reclamation of the cut slope. Such estimate reflected costs for 30 years of monitoring and maintenance of the unstable cut slope and of a catchment and berm structure proposed to be constructed adjacent to the toe of the cut slope. The proposed amount did not include costs for reclamation of the unstable cut slope in accordance with SMARA and the SMGB's regulations. A summary of estimated costs per proposed reclamation alternative of the unstable cut slope as presented in the November 24, 2008 "*Analysis of Slope Mitigation Alternatives*" is as follows:

Alternative 1 – Imported Fill Buttress	\$20,441,250
Alternative 2 – Ridge Cut\Fill Buttress Balanced on Site	\$2,481,125
Alternative 3 – Cut\Fill Buttress Balanced on Site with Retained Slope	\$7,590,000
Alternative 4 – Structural Slope Stabilization	\$19,780,000
Alternative 5 – End Use Restrictions/Setback/Monitoring/Maintenance	\$550,000

In addition, in correspondence dated January 15, 2009, the operator submitted a revised financial assurance cost estimate for reclamation of portions of the site other than the cut slope (e.g. the quarry floor and hide wall areas) in accordance with the currently approved reclamation plan. Such revised amount was calculated at approximately \$1,277,825. SMGB staff reviewed this revised cost estimate and considered it adequate.

After lengthy discussion at their meeting on February 5, 2009, the Geohazards Committee moved to accept proposed Alternative 5 as an adequate strategy for reclamation of the quarry cut slope. The committee additionally moved to recommend to the whole SMGB that

the operator provide an interim financial assurance amount for the Richmond (Chevron) Quarry in the amount of \$1,700,000.00.

SMGB February 5, 2009, Regular Business Meeting: Based in part on recommendations from the Geohazards Committee, at its February 5, 2009 meeting, the SMGB moved to approve an interim financial assurance amount of \$1,700,000.00. On March 2, 2009, the SMGB received the requested financial assurance from the operator.

SMGB July 9, 2009, Regular Business Meeting: At its July 9, 2009, regular business meeting, the SMGB moved to accept the operators proposed setback, monitoring and maintenance slope reclamation alternative (Alternative 5), and directed the operator to prepare an amended reclamation plan describing how the existing cut slope will be reclaimed to a stable condition with a factor of safety appropriate for the proposed end use, and to adjust the financial assurance, as appropriate. An amended reclamation plan, dated November 6, 2009, was submitted to the SMGB, and was subsequently reviewed by OMR and SMGB staff. The amended reclamation plan included a revised financial assurance cost estimate for implementation of Alternative 5 and completion of additional reclamation activities at the Richmond (Chevron) Quarry in the total amount of \$429,121.82.

SMGB February 11, 2010, Regular Business Meeting: After review and further consideration during their February 11, 2010, regular business meeting, the SMGB moved to reject the "Amendment to Reclamation Plan" dated November 6, 2009, for the Richmond (Chevron) Quarry as prepared by LSA Associates, Inc. The SMGB further directed the operator to prepare an amended reclamation plan for the site that is consistent with SMARA and the SMGB's regulations, and that describes how the quarry cut slope will be reclaimed to stable conditions, and adjust the financial assurance, as appropriate.

**CURRENT FINANCIAL ASSURANCE AMOUNT:** As noted above, on March 2, 2009, the SMGB received an interim financial assurance for the Richmond (Chevron) Quarry in the form of a Surety Bond for the amount of \$1,700,000.00. Based, in part, on the SMGB's February 11, 2010 directive, and on requirements of the currently approved reclamation plan for the subject site, the current financial assurance amount is deemed inadequate. More specifically, the financial assurance for the Richmond (Chevron) Quarry should include sufficient amounts for completion of reclamation activities for the site per the currently approved reclamation plan, plus an estimated amount for mitigation of the unstable cut slope in accordance with SMARA and the SMGB's regulations.

**CONSIDERATION BEFORE THE SMGB:** The SMGB may consider establishment of, and require that the operator provide, an interim financial assurance amount that would be considered adequate to cover anticipated costs of reclamation based on current knowledge of site conditions at the Richmond (Chevron) Quarry.

**EXECUTIVE OFFICER'S RECOMMENDATION:** It is the recommendation of the Executive Officer that the currently approved interim financial assurance amount be increased to reflect reclamation of the Richmond (Chevron) Quarry as required by the approved reclamation plan, plus an additional amount for mitigation of the unstable quarry cut slope in accordance with the requirements of SMARA and the SMGB's regulations. The Executive Officer recommends that, at a minimum, the interim financial assurance amount should include costs as detailed in the January 15, 2009, Reclamation Cost Estimate provided by the operator, and the least expensive slope mitigation alternative as presented in the November 24, 2008 "Analysis of Slope Mitigation Alternatives" prepared by ENGEO, Inc. A generalized breakdown of these costs is as follows:

January 15, 2009 Reclamation Cost Estimate:	\$1,277,825
November 24, 2008 Alternative 2: (Ridge Cut/Fill Buttress Balanced on Site)	\$2,481,125

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Total Interim Financial Assurance Amount	\$3,758,950
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**SUGGESTED MOTION LANGUAGE:**

To request an Interim Financial Assurance Amount:

*Mr. Chairman, in light of the information before the State Mining and Geology Board today, I move that the Board request that an interim financial assurance in the amount of \$3,758,950.00 for the Richmond (Chevron) Quarry, CA Mine ID #91-07-0006, located in the City of Richmond, as such amount is considered adequate, based on current site conditions, to reclaim the site in accordance with the approved reclamation plan, and to meet the minimum requirements of SMARA and the SMGB's regulations. Such amount should be provided to the SMGB by Monday, April 12, 2010.*

Respectfully submitted:

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Stephen M. Testa  
Executive Officer